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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,341	09/14/2000	Trent Ray Jaeger	13862(YOR920000575US1)	8970

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Richard L Catania
Scully Scott Murphy & Presser
400 Garden City PLaza
Garden City, NY 11530

EXAMINER	
CAO, DIEM K	

ART UNIT	PAPER NUMBER
2126	5

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/661,341	JAEGER ET AL.	
	Examiner	Art Unit	
	Diem K Cao	2126	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2000*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Application filed on 9/14/2000.

2. Claims 1-35 are presented for examination.

Drawings

3. The drawings filed on 9/14/2000 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftperson's Patent Drawing Review," PTO-948. In order to avoid abandonment of this application, correction is required in reply to the Office Action. The correction will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 4, 7-11, 13, 15, and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 4 claims "the message embodied ... to the monitor", it is unclear where in the specification supports for this limitation.

The same problem also applies to claims 15 and 17. Furthermore, the meaning of claim 15 is unclear.

Claims 7-8 claims checking the source and destination timeout. It is unclear where in the specification support for the limitations of claims 7-8. The specification seems to disclose (page 3, lines 1- 17) timeout expires, and does not seem to support for the language of the claims. Examiner interprets claims 7-8 are well known in the art for examining purpose.

Claims 9-11 again claims limitations that examiner could not find the support in the specification, the specification only seems to disclose (page 9, lines 1-2) the monitor tasks must be signified to the kernel. Examiner interprets the limitations of claims 9-11 in light of the above specification for examining purpose.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 cites "d." and "d." on lines 7 and 15, respectively. The period "." At line 12 also need to be removed, a comma should be used instead.

Regarding claims 6 and 8, the phrase "i.e." and "()" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claims 18-19 recites the limitation "the process" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 cites "controlling the synchrony ... is intercepted and examined", the meaning of the limitation "to the same semantics" is unclear.

The same problem is also applied to claims 26 and 31.

Claim 24 cites "wherein one or more of the monitor manages when the source is unblocked", the meaning of the limitation, especially "the monitor manages" is unclear. No art rejection is applied to this limitation.

The same problem is also applied to claims 29 and 34.

Corrections are required.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 21, 26 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Au et al. (L4User Manual).

9. **As to claim 21**, AU teaches an IPC process receiving requests (an OS may consist of many server threads ... to an OS server; page 50, section 4.6.1), each of the IPC requests including a source identifier identifying a source and a destination identifier identifying a destination (to send or receive a message ... destination/source thread respectively; page 13, section 2.2.3), building IPCs in response to the requests (Fill in the message header ... for an IPC

send; page 17), transmitting the IPCs from the sources to the destinations (Sending/Receiving IPC message; page 12, section 2.2.3 and T1 sends to T4; page 24, example 2.5), intercepting and examining selected ones of the IPCs (T1 send to T4 but the message is intercepted by its chief, T2; page 24, example 2.5 and intra-clan messages are delivered directly from sender to receiver, inter-clan messages ... the message entirely; page 24, 2nd and 3rd paragraphs), and controlling the synchrony of the IPCs so that each IPC appear to the source and to the destination to be implemented according to the same semantics regardless of whether the IPC is intercepted and examined (IPC is used for synchronization; page 3 and All L4IPC is synchronous and unbuffered ... then the other party must wait; page 6, section 2.1 and Deceiving IPC is used when T2 and T3 forwards their messages ... as coming directly from T1).

10. **As to computer system and computer product claims 26 and 31**, they correspond to the method claim of claim 21.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 1-20, 22-25, 27-30 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Au et al. (L4User Manual) in view of Jaeger et al (Security Architecture for Component-based Operating Systems).

13. **As to claim 22**, Au does not explicitly teach the step of building and transmitting IPCs includes the step of using a kernel to build and transmit the IPCs, the step of intercepting and examining selected ones of the IPCs includes the step of using monitors to intercept and examine the selected ones of the IPCs, and the controlling step includes the step of using the monitors as extensions of the kernel so that the IPCs appear to the sources and to the destinations to be implemented according to the same semantics regardless of whether a monitor is used or not used to intercept and examine the IPCs.

14. Jaeger teaches the step of building and transmitting IPCs includes the step of using a kernel to build and transmit the IPCs (A component-based operating ... convert inter-task method invocations into IPCs transparently; page 2, left column and the nucleus provides ... the reference monitor; page 3, left column, section 3.1), the step of intercepting and examining selected ones of the IPCs includes the step of using monitors to intercept and examine the selected ones of the IPCs (The monitor intercepts all IPC from and to the task in which it monitors; page 3, right column, second paragraph and The reference monitors intercept ... is rejected by the monitor; page 3, right column, last paragraph), and the controlling step includes the step of using the monitors as extensions of the kernel so that the IPCs appear to the sources and to the destinations to be implemented according to the same semantics regardless of whether a monitor is used or not used to intercept and examine the IPCs (monitor is part of Lava system; page 3, left paragraph, last column and the architecture can support the dynamics that systems

composed from components will possess; page 1, left column, first paragraph and the security architecture ... different component processes; page 1, right column, last paragraph).

15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Au and Jaeger because it provides to the users dynamic security architecture for component-based system.

16. **As to claim 23**, Au teaches for each IPC, one or more of the monitors manages the identity of the source for the IPC (T2 code ... clientid; page 26).

17. **As to claim 24**, Au teaches for each IPC, blocking the source for the IPC at selected times (IPC is also used for synchronization as it is blocking; page 3 and If either the sender or the receiver is not ready, then the other party must wait; page 6).

18. **As to claim 25**, Au teaches for each IPC, one or more of the monitors manages the identity of the source for the IPC (T2 code ... clientid; page 26).

19. **As to claims 27-30**, see rejections of claims 22-25 above.

20. **As to claims 32-35**, see rejections of claims 22-25 above.

21. **As to claim 1**, see rejections of claims 21, 22 and 24 above. Jaeger teaches the controlling monitor of the source (the SAI associates a reference monitor with each component task; page 3, right column). However, Au does not explicitly teach the controlling monitor of the source can request that the kernel process unblock the source at any time after being signaled that the communication was delivered to the destination. Au teaches all L4 IPC is synchronous, if either the sender or the receiver is not ready, then the other party must wait (page 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve the system of Au to maintain the synchronous of inter-process communication.

22. **As to claim 2**, Au as modified teaches the monitor may change the identity of the source that is seen by the destination (The use of deceiving ... may be encoded as part of the message; page 25). Although Au does not teach the mainlining the identity of the original source for unblocking purpose, Au teaches all L4 IPC is synchronous, if either the sender or the receiver is not ready, then the other party must wait (page 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve the system of Au because it provides the users with method to maintain the synchronous of inter-process communication.

23. **As to claim 3**, Au does not teach the monitor may change the identity of the destination to which the communication is to be delivered. Au teaches the chief has access to all part of the message and can modify the message before forwarding it (page 24). It would have been obvious to one of ordinary skill in the art that the chief can also change the identity of the destination.

24. **As to claim 4**, Au as modified teaches the message embodied in the communication is not delivered to the monitor (declare a register buffer and copy data into it ... provide the address of the buffer; page 18).

25. **As to claim 5**, Au teaches the timeouts on the communication are interpreted as being relative to the behaviors of the source and destination (L4 Timeouts; pages 14-15).

26. **As to claim 6**, Au as modified teaches the kernel process does not deliver the communication to the destination or a monitor until the destination is ready to receive the communication and the destination timeout has not expired (All L4 IPC is synchronous ... the other party must wait; page 6 and L4 Timeouts; pages 14-15).

27. **As to claim 7**, Au as modified teaches the kernel process delivers the communication to the monitor as soon as the monitor is ready, and the monitor checks for the timeout's expiration (All L4 IPC is synchronous ... the other party must wait; page 6 and L4 Timeouts; pages 14-15).

28. **As to claim 8**, Au as modified teaches the kernel process verifies the source timeout has not expired before sending the communication to the destination or monitor (L4 Timeouts; pages 14-15).

29. **As to claim 9**, Au as modified does not teach multiple monitor processes may claim to be the controlling monitor of a source. Au as modified teaches a monitor process my claim to be the

controlling monitor of a source (the SAI associates a reference monitor with each component task; page 3, right column). It would have been obvious the SAI could associates more than one reference monitor with each component task because it just a design choice.

30. **As to claim 10**, Au as modified teaches the kernel process may authorize a monitor's permission to be the controlling monitor of a particular source (the SAI associates a reference monitor with each component task; page 3, right column).

31. **As to claim 11**, Au as modified teaches the kernel process may authorize a monitor's permission to be the controlling monitor of any source (the SAI associates a reference monitor with each component task; page 3, right column).

32. **As to claim 12**, Au does not teach the controlling monitor for a particular source may be stored in the kernel. Jaeger teaches the controlling monitor for a particular source may be stored in the kernel (the Lava system ... reference monitor; page 3, section 3.1).

33. **As to claim 13**, Au does not teach a sequence of controlling monitors for a particular source may be stored in the kernel (the Lava system ... reference monitor; page 3, section 3.1).

34. **As to claim 14**, Au as modified does not explicitly teach the identity of the controlling monitor of a particular source is passed in the IPC to the destination. Au teaches deceiving IPC need not be used in some situations (page 25), and the chief can modified the message (page 24).

It would have been obvious the identity of the controlling monitor could be embedded in the IPC.

35. **As to claim 15**, Au as modified does not teach the sequence of controlling monitors for a particular source is stored by the controlling monitor storing its controlling monitor predecessor for each source. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implementing the controlling monitor stores it controlling monitor predecessor in order to know which monitor to next one.

36. **As to claim 16**, Au as modified does not teach the controlling monitor for a source is implemented by changing the original source to the controlling monitor and the controlling monitor stores the identity of the original source. See rejection of claim 2 above.

37. **As to claim 17**, Au as modified does not teach a sequence of controlling monitors for a particular source is implemented as a sequence of original source changes in the monitors where the last is the true original source. Jaeger teaches a sequence of controlling monitors for a particular source is implemented as a sequence of original source changes in the monitors where the last is the true original source (the object field refer to a chain ... by the server; section 4.3)

38. **As to claim 18**, Au does not teach the monitors are implemented as threads in the same process. Jaeger teaches the monitors are implemented as threads in the same process (Since reference monitors ... per component task; section 4.4).

39. **As to claim 19**, Au does not teach the monitors are implemented as procedures in the same process. Jaeger teaches the monitors are implemented as procedures in the same process (reference monitors ... per component task; section 4.4).

40. **As to claim 20**, Au does not teach the monitor procedures are in the kernel process. Jaeger teaches the monitor procedures are in the kernel process (In the Lava system ... reference monitors; page 3, left column).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diem K Cao whose telephone number is (703) 305-5220. The examiner can normally be reached on Monday - Thursday, 9:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Diem Cao

MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100